

***Stylidium* miscellany 3: a synopsis of Robert Brown's Stylidiaceae types and occasional notes on associated names**

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Abstract

Wege, J.A. *Stylidium* miscellany 3: a synopsis of Robert Brown's Stylidiaceae types and occasional notes on associated names. *Nuytsia* 28: 229–246 (2017). A synopsis of the 39 species of Stylidiaceae named by Robert Brown is presented and a full synonymy provided. Lectotypes are selected for the following Brown names: *Levenhookia pusilla* R.Br., *Stylidium alsinoides* R.Br., *S. articulatum* R.Br., *S. assimile* R.Br., *S. caespitosum* R.Br., *S. calcaratum* R.Br., *S. corymbosum* R.Br., *S. crassifolium* R.Br., *S. diversifolium* R.Br., *S. eriorhizum* R.Br., *S. fasciculatum* R.Br., *S. floribundum* R.Br., *S. guttatum* R.Br., *S. tenuifolium* R.Br. (= *S. laricifolium* Rich.), *S. luteum* R.Br., *S. pedunculatum* R.Br., *S. reduplicatum* R.Br. (= *S. pilosum* (Labill.) Labill.), *S. spinulosum* R.Br., *S. tenellum* R.Br. (= *S. tenerum* Spreng.) and *S. violaceum* R.Br. *Stylidium robustum* Sond. is newly synonymised under *S. diversifolium* and lectotypes are selected for two additional synonyms of this species, *S. marginatum* Sond. and *S. pruinosum* Sond. *Stylidium pilosum* is lectotypified and a neotype designated for *S. pilosum* var. *brevius* E.Pritz. Comments on the uncertain circumscription of *S. armeria* (Labill.) Labill. (of which *S. melastachys* R.Br. is a synonym) are provided.

Introduction

As the naturalist on board the HMS *Investigator* voyage under the command of Matthew Flinders, Robert Brown's contribution to Australian botany is legendary (Stearn 1960; Mabberley 1985; Vallance *et al.* 2001; Moore 2005) and his research on the triggerplant family Stylidiaceae is no exception. His description of 38 species of *Stylidium* Sw. as part of his *Prodromus* (Brown 1810) remains an extraordinary taxonomic contribution to the genus, which is now known to comprise more than 300 species. He also named and circumscribed the family, which he insightfully defined on the basis of the reduced number of stamens, unique floral column and imbricate aestivation of the corolla lobes (Brown 1810, 1814), and described the genus *Levenhookia* R.Br. based on his collection of *L. pusilla* R.Br.

Twenty-nine of the *Stylidium* species described by Brown occur in south-western Australia, a centre of diversity for the genus. Indeed, the *Investigator* anchorage at King George Sound (Albany) from 8 December 1801 to 5 January 1802 (Vallance *et al.* 2001) was auspicious in terms of *Stylidium*—not only is the greater Albany region an area of high triggerplant diversity, but many species are in flower in this region at this time. This is in stark contrast to many other genera, which are well past their peak spring-flowering period by then (Keighery & Gibson 2005). Brown had ample opportunity to explore and collect plants from a range of habitats and it is a testament to his skills that he managed to collect the majority of species known from the region; almost all of the species that he did not find

were either past flowering or require disturbance to stimulate flowering.

However, Brown was not infallible. Examination of his *Stylidium* types has revealed three clear instances of mixed gatherings or mixed species concepts: *S. scandens* R.Br. comprised separate collections of *S. scandens* and *S. nymphaeum* Wege (Wege 2010), *S. junceum* R.Br. was based on a mixed gathering of *S. junceum*, *S. squamosotuberosum* Carlquist and *S. thryonides* Wege (Wege 2014), and *S. fasciculatum* R.Br. was based on a mixed gathering of *S. fasciculatum* and *S. adnatum* R.Br. (see under *S. fasciculatum* below). It is also possible that his type gathering of *S. articulatum* R.Br. includes a fragment of *S. amoenum* R.Br. (see under *S. articulatum* below).

The following synopsis of Brown's Styliaceae names and types is published in preparation of an account of the family for *Flora of Australia* and as an aid in the preparation of a forthcoming publication by David Mabberley and David Moore, which will provide a comprehensive register of Brown's plant names and types (Mabberley & Moore 2007). This paper also provides an opportunity to provide additional taxonomic or typification notes on associated names.

Methods

For those species based solely on Brown's own collections, the following approach has been adopted. Where only one sheet has been located (i.e. for *S. adnatum*, *S. amoenum*, *S. breviscapum* R.Br., *S. falcatum* R.Br., *S. propinquum* R.Br. and *S. rotundifolium* R.Br.), it is treated as the holotype. These specimens have a blue *Iter Australiense* label (prepared according to the instructions of J. J. Bennett), indicating that they originated from Brown's own herbarium (Mabberley 1985), and in each case they bear Brown's original field labels as well as an annotation by Brown indicating the page number for that taxon in his *Prodromus*.

Where more than one sheet has been found, the material at BM from Brown's own herbarium (as described above) is designated as an appropriate lectotype; invariably these specimens are the best and most complete of the available material. Of these, there are several species (*Levenhookia pusilla*, *S. assimile* R.Br., *S. diversifolium* R.Br., *S. inundatum* R.Br. and *S. reduplicatum* R.Br.) for which the only material known is the lectotype and one or more 'Dryander duplicates' (see explanation in Vallance *et al.* 2001: 14). The Dryander duplicates were unlikely to have been used by Brown for his *Prodromus* descriptions, in which case they could be interpreted as isotypes (D.J. Mabberley pers. comm.). However, all material was used to inform Brown's descriptive slips (his plant descriptions made on the expedition and now held at BM) and it remains a possibility that he consulted these slips when compiling his Styliaceae account (e.g. for detail concerning the presence or absence of appendages on the corolla lobes and labellum, which can be difficult to see in the dried state).

While Brown's descriptions were based primarily on his own material, three species of *Stylidium* (*S. alsinoides* R.Br., *S. capillare* R.Br. and *S. pedunculatum* R.Br.) were based solely, or in part, on material collected by Joseph Banks and Daniel Solander from Endeavour River (Queensland) in 1770, while *S. despectum* R.Br. was based on a collection made by William Paterson from Tasmania in 1805 (Wege 2011). Only one sheet has been located for both *S. capillare* and *S. despectum* and accordingly they are treated as holotypes. For both *S. alsinoides* and *S. pedunculatum*, the primary specimen in Banks' Herbarium (annotated by Brown) has been designated as the lectotype since it is of better quality than the material that formed part of Brown's 'study set' that he took to Australia, although the latter may also have been used in descriptions made on board *Investigator*.

Notes on lectotypifications of taxa named by authors other than Brown are included under each species.

Typifications and miscellany

Levenhookia pusilla R.Br., *Prodr. Fl. Nov. Holland.* 573 (1810). *Type citation*: ‘(M.) v. v.’ *Type specimen*: near the observatory, Princess Royal Harbour, King George’s Sound [Western Australia], 21 December 1801, *R. Brown s.n.* [Bennett No. 2613] (*lectotype*, here designated: BM 001041273!; *isolectotype*: BM 000948765!).

Stylidium adnatum R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Candollea adnata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: Goose Island Bay larger island [Middle Island, Western Australia], January 1802, *R. Brown s.n.* [Bennett No. 2611] (*holotype*: BM 000812588!).

Stylidium propinquum R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Stylidium adnatum* R.Br. var. *propinquum* (R.Br.) R.Br. in Sims, *Bot. Mag.* 52, t. 2598 (1825). *Stylidium adnatum* var. *abbreviatum* Benth., *Fl. Austral.* 4: 33 (1868), *nom. illeg.*, *nom. superfl.* *Candollea adnata* var. *abbreviata* (Benth.) De Wild., *Icon. Horti Then.* 2: 9, t. 43 (1901), *nom. illeg.* *Type citation*: ‘(M.) v. v.’ *Type specimen*: King George’s Sound [Western Australia], December 1801–January 1802, *R. Brown s.n.* [Bennett No. 2612] (*holotype*: BM 000812587!).

Notes. The holotype of *S. adnatum* is a single, fairly robust individual with numerous stems that arise from a lignotuberous stock. This species, which is widespread in southern Western Australia (Western Australian Herbarium 1998–), is usually geophytic, with plants dying back to a lignotuber over the dry, summer months and resprouting following autumn rains. Occasionally, the above-ground stems persist (presumably if there is sufficient water available over summer), with the apical stem node giving rise to new shoots and occasionally adventitious roots. Apical shoots are evident in the left hand individual on the holotype of *S. propinquum*; material that differs further from the holotype of *S. adnatum* in having shorter and narrower stems and, for the most part, shorter scapes with fewer flowers. Brown later treated this taxon as variety of *S. adnatum*, noting the two forms share an ovary that is sterile in one loculus (Sims 1825). Although Brown’s variety was recognised by Erickson (1958), the illegitimate name *S. adnatum* var. *abbreviatum* has been inexplicably used in Western Australia for many years (Paczkowska & Chapman 2000; Western Australian Herbarium 1998–). *Stylidium adnatum* is a variable species in terms of its habit and overall robustness (e.g. stem length and width, inflorescence length and flower number) and var. *propinquum* is not worth recognising.

Stylidium alsinoides R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Candollea alsinoides* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(T.) B. v. s.’ *Type specimen*: Endeavour River [Queensland, June–August], 1770, *J. Banks & D. Solander s.n.* (*lectotype*, here designated: BM 000645715!; *isolectotypes*: BM 001041266! [study set], NSW 133570 *n.v.*).

Typification. Prior to 1 January 2001, if an author stated that a particular specimen was the holotype of a previously published name but other specimens of the cited gathering existed, then this was an error to be corrected to lectotype (see McNeill 2014); however, Bean’s (2000: 635) citation ‘holo: ?BM *n.v.*’ cannot be corrected in this manner since there are two Banks and Solander duplicates housed at BM (neither of which were seen or annotated by Bean).

Stylidium amoenum R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea amoena* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: King George’s Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2592] (*holotype*: BM 000903578!).

Notes. Refer to the notes under *S. articulatum* regarding material of *S. amoenum* on the CANB isolectotype of that species.

Stylidium armeria (Labill.) Labill., *Nov. Holl. Pl. Spec.* 2: 66, t. 216 (1806). *Candollea armeria* Labill., *Ann. Mus. Hist. Nat.* 6: 455 (1805). *Type*: ‘Habitat in capite van-Diemen’ [May 1792, J.J.H. de Labillardière s.n.] (*syntypes*: BM 000894111! [individuals labelled ‘B’], B-W 17048-010 image!, FI 006811!, G 00354007!, G-DC G 00493487 image!, ?MPU 016343 image!).

Stylidium melastachys R.Br., *Prodr. Fl. Nov. Holland.* 568 (1810). *Type citation*: ‘(D.) v. v.’ *Type specimen*: Kent’s Group, Bass Straight, December 1803, R. Brown s.n. [Bennett No. 2577] (*lectotype* *vide* E.J. Raulings & P.Y. Ladiges, *Austral. Syst. Bot.* 14(6): 929 (2001): BM 000603724!; *isolectotypes*: BM 000603725!; DBN n.v., E 00279234!, E 00279235!, E 00279236!, K 000060478!, MEL 2257703!, MEL 2257704!, MEL 2257705!, P 00712398 image!).

Stylidium dilatatum W.D.Jacks. & R.J.E.Wiltshire, *Austral. Syst. Bot.* 14(6): 961, 964, 965 (2001). *Type*: ridge west of Proctors Road, opposite The Lea, Tasmania (*holotype*: HO 22793!; *isotypes*: BM n.v., HO 22790!, MEL 2330860 image!).

Typification. Lectotypification of *S. armeria* should only be considered once the taxonomy of the *S. graminifolium* Sw. complex is resolved (see notes below). All duplicates of Labillardière’s gathering are therefore treated here as syntypes regardless of how they are annotated or databased. Note that FI 006811, which I have mistakenly annotated as the holotype, bears extensive annotations by Labillardière. My annotation slip on this specimen should read ‘flowering specimens possess two broad channels of stomata on lower [not upper] surface and lack stomata on upper [not lower] surface’. I also observed stomata towards the apex of the upper leaf surface in the fruiting individual that is second from the left.

Notes. *Stylidium armeria*—a species from the widespread and morphologically variable south-eastern Australian *S. graminifolium* complex—was simultaneously reinstated by Jackson and Wiltshire (2001) and Raulings and Ladiges (2001), albeit with differing circumscriptions (both studies treated Brown’s *S. melastachys* as a synonym). It is not my aim here to provide a comprehensive commentary on the discrepancies within and differences between these two publications, nor a solution to the taxonomic confusion that has been created by their publication. This group of triggerplants (which, in addition to the taxa referred to herein, includes the New South Wales endemic *S. productum* Hindm. & Blaxell) exhibits complex patterns of morphological and ecological variation and I have limited field knowledge of them so far. Moreover, I have made only a cursory examination of a fraction of the specimens available for study in Australian herbaria. The following brief summary simply serves to highlight some of the taxonomic issues that need resolving and the scope of research that will need to be conducted in order to do so.

The study by Jackson and Wiltshire (2001), which had a Tasmanian focus, redefined *S. graminifolium* as a diploid species ($n = 15$, $2n = 30$) widespread on infertile soils or sites of high evapotranspirational stress in summer and autumn, and characterised by narrow (1 to almost 3 mm wide), bifurrowed leaves. They describe its frequent parapatric distribution in Tasmania with broader-leaved, tetraploid cytotypes ($2n = 60$) that favour fertile soils or sites of low evapotranspiration. The study by Raulings and Ladiges (2001), which had a Victorian focus and did not investigate ploidy levels, similarly delineated *S. graminifolium* as a species from sandy habitats with narrow (1–2.5 mm wide), bifurrowed leaves. The leaves of the broader-leaved forms (variously described as *S. armeria*, *S. dilatatum* or *S. montanum* Raulings & Ladiges) were described in both studies as >3 mm wide and flat in section.

While at first glance these studies appear to be in broad agreement with respect to the circumscription of *S. graminifolium*, there are some significant discrepancies, not limited to the following three examples. Firstly, Raulings and Ladiges (2001) consider the regular serrations on the leaf margins to be taxonomically informative, with the broad-leaved forms either having smooth margins or occasional serrations that are mostly confined to near the tip; however, Jackson and Wiltshire (2001), state that this feature is taxonomically unreliable, describing *S. graminifolium* as variably serrulate, with the margins sometimes smooth or serrulate near the apex. Secondly, scape width is described by Raulings and Ladiges as >2 mm and diagnostic with respect to *S. montanum* (<2 mm wide) but not *S. armeria* (>2 mm), whereas Jackson and Wiltshire describe it as narrower (mean 1.5 mm; upper scape *c.* 1 mm) and diagnostic with respect to *S. dilatatum* (mean 3.2 mm; upper scape *c.* 2 mm) and *S. armeria* (mean 4.4 mm; upper scape *c.* 4 mm wide). Thirdly, Raulings and Ladiges consider throat appendage morphology (specifically the reduced size of the anterior-most appendages) as a useful character upon which to separate *S. graminifolium* from *S. armeria* (but not *S. montanum*), but Jackson and Wiltshire state that throat appendage morphology is uninformative.

The two studies differ even further with respect to the broader-leaved forms (leaves >3mm wide). Jackson and Wiltshire (2001) recognised two tetraploid species, *S. armeria s. str.* and *S. dilatatum*, the former restricted to littoral habitats of highly exposed coasts in Tasmania and on islands of the Bass Strait (and ‘probably extending to about Twofold Bay in NSW’), and the latter widespread in more inland areas of south-eastern Australia and Tasmania. They were differentiated by leaf shape (spathulate in *S. armeria s. str.* and linear in *S. dilatatum*) and stomata distribution (confined to the lower leaf surface in *S. armeria s. str.* and present on both surfaces in *S. dilatatum*), with the flowers of *S. armeria s. str.* noted to be *c.* 20% larger (although measurement ranges were not provided for either species). Additional diagnostic information for *S. dilatatum* was mostly provided with respect to *S. graminifolium* and consequently taxonomic placement of broad-leaved herbarium specimens has proven difficult (Gray 2011). Of note is the contradictory information given by Jackson and Wiltshire with respect to the distribution of stomata in *S. armeria s. str.* (e.g. the description on p. 960 indicates stomata can in fact be present on the upper leaf surface) and the existence of collections from well outside the cited geographic range of *S. armeria s. str.* which appear to lack stomata on the upper leaf surface (e.g. *Hj. Eichler* 14634, Bogong High Plains, CANB).

The broad-leaved form was broadly circumscribed by Raulings and Ladiges (2001) under *S. armeria*, with the exception of *S. montanum*, a species they recognised from subalpine and alpine habitats in Victoria, New South Wales and Tasmania that grows in close proximity to *S. armeria* on the Bogong High Plains and at Mt Buffalo. *Stylidium montanum* was said to be characterised by its relatively short, pale to mid-green leaves (4–15 cm long *cf.* 15–40 cm and dark green in *S. armeria*), shorter, narrower scapes (10–45 cm high and 2 mm wide *cf.* 50–100 cm high and >2 mm wide in *S. armeria*) with fewer flowers (10–30 *cf.* (25–)30–100 in *S. armeria*) and a sparser indumentum (glabrous or glabrescent below the lowest flower *cf.* glandular-hairy below the lowest flower in *S. armeria*). Jackson and Wiltshire (2001), who were aware of the taxonomic studies being conducted by Raulings as part of her PhD dissertation, refer to *S. montanum* on p. 953 (as *Stylidium sp. nov.*) and suggest that it is a tetraploid ($2n = 60$) and does not occur in Tasmania. Since no specimens of *S. montanum* from Tasmania were cited by Raulings and Ladiges, it is not recognised in that state (Council of Heads of Australasian Herbaria 2011a).

In Tasmania, *S. armeria* and *S. dilatatum* are considered insufficiently distinct to warrant recognition of the latter species (Gray 2011). A broad concept of *S. armeria* is also followed in Victoria, where Best *et al.* (2009) described a Critically Endangered subspecies, *S. armeria* subsp. *pilosifolium* R.J. Best, D.E. Francis & N.G. Walsh, with eglandular and glandular hairs on both leaf surfaces. In preparation for

a treatment of Styliaceae for *Flora of South Australia*, I have applied Raulings and Ladiges' broad concept of *S. armeria* to South Australian material at AD; however, I did not have time to examine their holdings of this complex from other states. Indeed, there are a significant number of collections at AD, CANB and NSW that have not been formally assessed.

I recently conducted a very preliminary sort of material at CANB which indicated that there is considerably more variation in this species complex than has been accounted for in either study. The reliability of leaf width to separate *S. graminifolium* (<3 mm) from *S. armeria s. lat.* and *S. montanum* (>3 mm) must be questioned in view of the significant number of specimens that intergrade. These include specimens with leaves <3 mm that otherwise have features considered by one or both studies as characteristic of *S. armeria* or *S. montanum* (e.g. leaves flat in T.S., leaf margin entire, corolla lobes large, anterior-most throat appendages conspicuous and column very long). Jackson and Wiltshire (2001) describe a higher density of smaller stomata in *S. graminifolium s. str.* as compared with the polyploidy species *S. armeria* and *S. dilatatum*, a feature that could perhaps inform taxonomic work if *S. armeria s. lat.* is indeed polyploid throughout its range, but this must also be questioned in view of recent ecological studies of *S. armeria s. lat.* that have indicated populations in alpine Victoria are diploid (Hoffman *et al.* 2009).

While both Raulings and Ladiges (2001) and Jackson and Wiltshire (2001) make insightful observations at a local scale, resolution of the taxonomy of the *S. graminifolium* complex demands a geographically comprehensive, modern and integrative approach that uses multiple lines of evidence (molecular, morphological, cytological and ecological) and includes examination and curation of the more than 2,500 specimens currently available in Australian herbaria. This is not something that I will be able to pursue from Western Australia.

Styloidium articulatum R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea articulata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimens*: King George's Sound [Western Australia], 3 January 1801, *R. Brown s.n.* [Bennett No. 2593] (*lectotype*, here designated: BM 000903579!; *isolectotypes*: BM 001041332!, CANB 279057! [right hand individual], E 00279199!, E 00279200!, K 000060586!, K 000060587!). ?*Paralectotype* [*syntype*]: King George's Sound [Western Australia], 3 January 1801, *R. Brown s.n.* (CANB 279057! [left hand individual]), = *S. amoenum* R.Br.

Typification. CANB 279057 consists of a complete individual of *S. articulatum* on the right hand side together with a fragment of *S. amoenum*. It is unclear whether the latter is type material of *S. amoenum* (due to an error that has occurred post-*Prodromus*) or indeed whether Brown made a mixed gathering. I have observed both species growing in close proximity east of Albany suggesting the latter is not beyond the realms of possibility.

Styloidium assimile R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea assimilis* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882), *nom. illeg. non* Steud. (1845 = a name of uncertain application in Dilleniaceae). *Type citation*: '(M.) v. v.' *Type specimen*: Princess Royal Harbour, King George's Sound [Western Australia], December 1801–January 1802, *R. Brown s.n.* [Bennett No. 2584] (*lectotype*, here designated: BM 000797560!; *isolectotype*: BM 000797561!).

Styloidium breviscapum R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Candollea breviscapa* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: Bay I South Coast [Lucky Bay, Cape Le Grand, Western Australia, January 1802], *R. Brown s.n.* [Bennett No. 2608] (*holotype*: BM 001041346!).

Stylidium breviscapum var. *erythrocalyx* Benth., *Fl. Austral.* 4: 31 (1868). *Type*: ‘S West end Cape arid Range’ [Western Australia], *s. dat.*, *G. Maxwell s.n.* (*lectotype fide* J.A. Wege, *Nuytsia* 20: 80 (2010): MEL 2046601!; *isolectotype*: K 000060836!). *Paralectotype* [*syntype*]: Fitzgerald Ranges, *s. dat.*, *G. Maxwell* 150 (BM!, MEL 672624!), = *S. involucreatum* F.Muell.

Stylidium caespitosum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea caespitosa* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: Princess Royal Harbour, King George’s Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2582] (*lectotype*, here designated: BM 000797556!; *isolectotypes*: BM 000797555! CANB 279058!, E 00279194!, E 00279195!, E 00279196!, FI 006806, K 000060801!, K 000060857!, MEL 0259383!, P 00712385!).

Stylidium calcaratum R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea calcarata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: Princess Royal Harbour, King George’s Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2598] (*lectotype*, here designated: BM 000645735!; *isolectotypes*: BM 000645736!, E 00279218!, FI 006805!, K 000060137!, K 000060139!, P 00712386!).

Stylidium mimeticum Lowrie & Carlquist, *Phytologia* 71(1): 16 (1991), *syn. nov.* *Type*: In sand, along Great Northern Highway north of Bullsbrook, 1 km south of Wandena Road (south end) on east side of the Highway, Western Australia, 3 December 1989, *Allen Lowrie* 243 (*holotype*: PERTH 01643126!; *isotypes*: PERTH 01643118!, RSA *n.v.*).

Notes. Examination of the floral column in type material of *S. calcaratum* at BM and K has revealed a minute, obtuse appendage on the bend identical to that described for the later-named *S. mimeticum* (see Lowrie & Carlquist 1991: 19, Figure 7F), leading me to regard the latter as a conspecific (Western Australian Herbarium 1998–). My revision of *S. calcaratum* and allies (subg. *Centridium* Lindl.) is in an advanced stage of preparation and seeks to resolve the taxonomy of this group across Australia.

Stylidium capillare R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea capillaris* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(T.) B v. s.’ *Type specimen*: Endeavour River, New Holland [Queensland, June–August] 1770, *J. Banks & D. Solander s.n.* (*holotype*: BM 000563895!).

Stylidium quadrifurcatum F.L.Erickson & J.H.Willis, *Vict. Naturalist* 73: 5 (1956), *syn. fide* A.R. Bean, *Austrobaileya* 5(4): 620 (2000). *Type*: Pine Creek, Northern Territory, April 1904, *J.H. Niemann s.n.* (*holotype*: MEL 1061651!).

Stylidium corymbosum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea corymbosa* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: South Coast Bay 1 [Lucky Bay, Western Australia], January 1802, *R. Brown s.n.* [Bennett No. 2602] (*lectotype*, here designated: BM 000603873!; *isolectotypes*: BM 000603874!, E 00279182!, E 00279183!, K 000060777!, K 000060778!).

Stylidium crassifolium R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea crassifolia* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: Princess Royal Harbour, King George’s Sound [Western Australia], December 1802 [*sic*; 1801], *R. Brown s.n.* [Bennett No. 2601] (*lectotype*, here designated: BM 001041312!; *isolectotypes*: CANB 279059!, E 00279259!).

Stylidium leptobotrys DC., *Prodr.* 7(2): 783 (1839). *Stylidium leptobotrydium* St.-Lag., *Ann. Soc. Bot. Lyon* 7: 135 (1880), *nom. illeg.*, *nom. superfl.* *Type*: ‘in Novâ-Hollandiâ ad Swan-river’ [Western Australia, 1835–1838], *J. Drummond s.n. (holotype: G-DC G 00458493!; isotypes: BM 000812571!, FI 006802, ?G 00358766!, ?K 000060346!, K 000060351!)*.

Dampiera inundata de Vriese, in Lehm., *Pl. Preiss.* 1(3): 404 (1845). *Type*: ‘In subturfosis hieme aqua inundatis planitie prope urbiculam Albany, Plantagenet [Western Australia], d. 29 m. Jan. 1840. Herb. Preiss. No. 1523’ (*syn: L 0001767 image!, L 0843043 image!, LD 1043796!*).

Notes. L 0001767 is labelled as the lectotype of *Dampiera inundata* and L 0843043 as an isolectotype but to my knowledge no lectotypification has been published.

Stylidium despectum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea despecta* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(D.) v. s.’ *Type specimen*: Port Dalrymple [George Town, Tasmania], 1805, *W. Paterson s.n. (holotype: BM 000645719!)*.

Stylidium brachyphyllum Sond., in Lehm., *Pl. Preiss.* 1(3): 386 (1845). *Candollea brachyphylla* (Sond.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type*: In solo turfoso ad Princess Royal Harbour [Albany, Western Australia], December 1840, *L. Preiss 2239 (lectotype fide J.A. Wege, Austral. Syst. Bot.* 24: 384 (2011): MEL 2069492!; *isolectotypes: G 00354009!, LD 1751955!, P 00712379!, TCD! [as L. Preiss 453]). Paralectotype [syntype]*: In depressis uliginosis silvae prope oppidulum, Perth [Western Australia], 26 September 1839, *L. Preiss 2248 (BR 0000005422593 image!, FI 113175!, G 00354004!, G 00354006!, G 00354008!, L 0001764 image!, L 0001765 image!, LD 1097540!, M 0175802!, MEL 2069490!, MEL 2069491!, MO-797443 image!, P 00712380!, W!)*.

Stylidium diffusum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea diffusa* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(T.) v. v.’ *Type specimen*: Shoal water bay [Queensland], 1802–1805 [3 September 1802], *R. Brown s.n. [Bennett No. 2605] (lectotype fide A.R. Bean, Austrobaileya* 5(4): 627 (2000): BM 000563899!; *isolectotypes: E 00279231!, K 000060550!)*.

Typification. Bean’s (2000: 627) type citation for *S. diffusum* (‘holo: BM’) is corrected herein to reflect his inadvertent lectotypification (see McNeill 2014).

Stylidium diversifolium R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea diversifolia* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: King George’s Sound [Western Australia], December 1801, *R. Brown s.n. [Bennett No. 2594] (lectotype, here designated: BM 000903576!; isolectotypes: BM 001041333!, BM 001041334!)*.

Stylidium robustum Sond., in Lehm., *Pl. Preiss.* 1(3): 378 (1845), *syn. nov.* *Type*: In arenosis districtus Sussex [Western Australia], 22 December 1839, *L. Preiss 2235 (syn: LD 1745623!, MEL 293341!, MEL 2235239!)*.

Stylidium marginatum Sond., in Lehm., *Pl. Preiss.* 1(3): 379 (1845). *Type specimens*: In arenosis colliculosis sylvae prope oppidulum Guildford [Western Australia], 13 September 1839, *L. Preiss 2232 (lectotype, here designated: MEL 2258906! [Sheet 1 of 2], MEL 2258907! [Sheet 2 of 2]; isolectotypes: G 00358783!, G 00358784!, L 0001773 image!, LD 1753748!, MO-797518 image!, P 00712392!, W! [2 sheets]); Swan River [Western Australia, 1841], *J. Drummond 529 (paralectotypes [syntypes]: BM 000903577!, K 000060680!, K 000060684!, MEL 2258911! P 03025123!, W! [2 sheets])*.*

Stylidium pruinosum Sond., in Lehm., *Pl. Preiss.* 1(3): 379 (1845). *Type*: In subturfosis hieme inundatis haud longe a Kaudiup, Plantagenet [Western Australia], 24 November 1840, *L. Preiss* 2236 (*lectotype*, here designated: MEL 2258905!; *isolectotypes*: BR 0000005422555 image!, G-DC G00358785!, G 00358786!, G 00358787!, GOET 011204 image!, LD 1731539!, M 0175794!, MEL 2258903!, MEL 2258904!, MO-797526 image!, P 00712393! W! [2 sheets]).

Typification. Mildbraed (1908) was correct to place both *S. marginatum* and *S. pruinosum* in the synonymy of *S. diversifolium*, although he failed to consider *S. robustum*, which is added to the synonymy presented herein. Sonder examined all of the known type material of *S. robustum*, of which LD 1745623 and MEL 293341 both comprise an individual in fruit while MEL 2235239 consists of three dissected corollas and columns. The two MEL sheets are from Sonder's personal herbarium and it is of note that the tip of the inflorescence of the fruiting specimen is missing. It is therefore possible that flowers were once present on this specimen but were dissected by Sonder, the fragments of which were placed in a packet (subsequently mounted on MEL 2235239 together with a label bearing diagnostic information in Sonder's hand). However, there remains an element of uncertainty with this interpretation and as such the three specimens are best regarded as syntypes.

Of the syntypes listed above for *S. marginatum*, Sonder examined and annotated the Preiss material at MEL and LD as well as the Drummond material at BM. The MEL material (MEL 2258906 and MEL 2258907), which is from Sonder's personal herbarium, is designated as an appropriate lectotype: the former sheet includes a single individual with an incomplete inflorescence, descriptive information in Sonder's hand, and dissected flowers in a packet, and the latter sheet is a complete individual (albeit with a broken scape).

I have seen several sheets of the type gathering of *S. pruinosum* but only three of these have been annotated by Sonder: MEL 2258904, MEL 2258905 and LD 1731539. MEL 2258905, which includes descriptive annotations by Sonder and dissected flowers fragments in a packet, is herein designated as the lectotype.

MEL 2069493 is from Sonder's personal herbarium and comprises a single, incomplete individual of *S. diversifolium* and two labels, one for *Preiss* 2232 (the type of *S. marginatum*) and the other for *Preiss* 2236 (the type of *S. pruinosum*). I am uncertain as to which gathering this specimen came from.

Notes. *Stylidium diversifolium* exhibits variation in overall robustness, leaf size and shape, hyaline leaf margin morphology (whether erose, fimbriate or entire), the number of whorls of sterile scape bracts, the presence of labellum lateral appendages and glandular trichome density, which accounts for Sonder's (1845) somewhat enthusiastic taxonomy.

Stylidium eriorhizum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea eriorhiza* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(T.) v. v.' *Type specimen*: Shoalwater Bay Thirsty Sound outer and inner entrance [Queensland], 3 September 1802, *R. Brown s.n.* [Bennett No. 2586] (*lectotype*, here designated: BM 000645731!; *isolectotypes*: BM 000645732!, E 00279213!, E 00279214!, FI 006824, K 000060209!, K 000060212!, MEL 2257317!, NSW 923303 image!, P 00712394 image!, P 00712395 image!).

Typification. Bean's (1999a) citation 'holo: BM' is not treated herein as an inadvertent lectotypification since he did not indicate which of the two duplicates at BM was the 'holotype' (neither duplicate has been annotated by Bean).

Stylidium falcatum R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Candollea falcata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: King George's Sound [Western Australia, December 1801–January 1802], *R. Brown s.n.* [Bennett No. 2610] (*holotype*: BM 000812589!).

Stylidium lessonii DC., *Prodr.* 7(2): 337 (1839). *Type*: 'in Novâ Hollandiâ ad portum Regis Georgii legit cl. Lesson. ... (v.s. comm. à cl. Mérat.)' (*holotype*: G-DC G00458499!; *isotype*: P 00313107!).

Stylidium falcatum f. *robusta* Wawra, *Itin. Princ. S. Coburgi* 1: 131 (1883). *Type*: King George's Sound [Western Australia], 1872–1873, *H. Wawra* Coll. I 854 [cited as 845 in protologue] (*holotype*: W!).

Stylidium fasciculatum R.Br., *Prodr. Fl. Nov. Holland.* 572 (1810). *Candollea fasciculata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882), *nom. illeg. non* R.Br. ex DC. (1817 = *Hibbertia depressa* Steud., Dilleniaceae). *Type citation*: '(M.) v. v.' *Type specimen*: Bald Head, King George's Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2609] (*lectotype*, here designated: BM 000812593!; *isolectotypes*: BM 000812582!, BM 000812592!, CANB 279060!, E 00279240!, E 00279263!, E 00279264!, K 00060329!, MEL 2254211!). *Paralectotype* [*syntype*]: King George's Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2609] (BM 000812591), = *S. adnatum*.

Notes. Brown describes the capsules of *S. fasciculatum* as having seeds in both loculi. While this is evident in the bulk of the material cited above, only one fertile locule is evident in the three fragments which comprise BM 000812591 (mounted on the lower right hand side of the sheet that also bears BM 000812593 and BM 000812582). This anomalous material is labelled by Brown as '*Stylidium fasciculatum* β' and is referable to *S. adnatum*.

Stylidium fasciculatum is a morphologically variable species that is the subject of ongoing taxonomic investigations that aim, in part, to resolve the status of *S. fasciculatum* subsp. *gigantic* (J.A. Wege JAW 1174) (Western Australian Herbarium 1998–) and *S. fasciculatum* var. *elongatum* Benth., the latter of which is a name of uncertain application (Council of Heads of Australasian Herbaria 2011b).

Stylidium floribundum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea floribunda* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(T.) v. v.' *Type specimen*: North Coast Carpentaria Island h [North Island, Northern Territory], 20 December 1802, *R. Brown s.n.* [Bennett No. 2588] (*lectotype*, here designated: BM 000563896!; *isolectotypes*: BM 000563900!, E 00279265!, E 00279266!, E 00279267!, K 000741770!, K 000741771!, MEL 1061579!, P 00712396!).

Typification. Bean's (1999b) citation 'holo: BM (2 sheets)' is not considered herein as an inadvertent lectotypification since the two sheets are duplicates and not a single specimen (BM 000563896 is the specimen from Brown's own herbarium while BM 000563900 is the Dryander duplicate).

Stylidium glandulosum Salisb., *Parad. Lond.* 2(1), t. 77 (1807). *Stylidium fruticosum* R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810), *nom. illeg., nom. superfl.* *Candollea glandulosa* (Salisb.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: 'Sponte nascentem in *New Holland*, oris occidentalibus, legit R^{us} BROWN. ... For this species, Mr. Hooker is indebted to E.J.A. WOODFORD, Esq. I saw it in flower at Kew, in July, 1804...' (?*holotype*: K 000355286!).

Notes. Peter Good collected seeds of *S. glandulosum* in January 1802 whilst *Investigator* was anchored

at Lucky Bay. It subsequently became one of the first triggerplants to be grown in Europe, with records indicating it was in cultivation at Kew by 1803 (Aiton 1814, as *S. fruticosum*). It was here in 1804, prior to Brown's return to Australia, that Richard Salisbury examined flowering material, publishing the species three years later in *Paradisus Londinensis*, a work that described and illustrated plants cultivated in the vicinity of London.

Salisbury was a controversial character and his hostile relationship with Brown is well documented (Mabberley 1985). Upon naming *S. glandulosum*, he falsely claimed that Brown had collected only fruiting material and it seems likely that he simply could not resist providing an account of a new species that belonged to a little known genus which had 'excited a considerable degree of curiosity' and become 'the subject of much conversation' (Salisbury 1807). Salisbury's description is accompanied by a plate by William Hooker (1779–1832), a botanical artist employed by the Horticultural Society of London (Staffleu & Cowan 1979). Ferdinand Bauer also illustrated *S. glandulosum*. His field drawing is labelled as *S. adnatum* in Pignatti-Wikus *et al.* (2000: 99, No. 23) but identifiable as *S. glandulosum* on account of its inflorescence structure and the ellipsoid, densely glandular-hairy hypanthia.

I have located two specimens of note: K 000355286, which is annotated 'Hort' in an unknown hand and has been mounted on a sheet alongside duplicates of Brown's gathering of this species; and BM 000797474, which bears an annotation on the reverse of sheet that reads 'Hort. Kew (N. Holl. Pet. Good) 1805'. Since fragments of Salisbury's herbarium are known to be at K (David Mabberley pers. comm.), the former is treated herein as a possible holotype.

Note I have mistakenly annotated Brown's collections of *S. glandulosum* at BM, E, K and P as type material of *S. fruticosum*; *S. fruticosum* is automatically typified by the type of *S. glandulosum*, a name Brown clearly did not want to adopt (Brown 1810: 570).

Stylidium guttatum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea guttata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 85 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: inter Princess Royal Harbour and Cape How[e], King George's Sound [Western Australia], 25 December 1801, *R. Brown s.n.* [Bennett No. 2607] (*lectotype*, here designated: BM 001041255!; *isolectotypes*: BM 001041256!, E 00279210!, FI 006820!, K 000060204!, P 00712399!).

Stylidium androsaceum DC., *Prodr.* 7(2): 783 (late Dec. 1839), *nom. illeg., non* Lindl. (1 Dec. 1839). *Type*: 'in Novâ-Hollandiâ ad Swan-river' [Western Australia, 1835–1838], *J. Drummond s.n.* (*holotype*: G-DC G 00458462!; *isotypes*: BM 001041254!, CGE!, FI 006821!, FI 006822!, G 00358797!, K 000060206!).

Stylidium hirsutum R.Br., *Prodr. Fl. Nov. Holland.* 568 (1810). *Candollea hirsuta* (R.Br.) F.Muell., *Syst. Census Austral. Pl.* 85 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: King George's Sound [Western Australia], 9 December 1801, *R. Brown s.n.* [Bennett No. 2676] (*lectotype fide* J.A. Wege, *Nuytsia* 16(1): 194 (2006): BM 000797546!; *isolectotypes*: BM 000797547!, CANB 279061!, E 00279186!, E 00279187!, FI 006817! K 000060258!, K 000741806!, MEL 2156094!, P 00712400!, P 00712401 image!).

Stylidium inundatum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Type citation*: '(M.) v. v.' *Type specimen*: near the observatory eastern shore of Princess Royal Harbour, King George's Sound [Western Australia], December 1801–January 1802, *R. Brown s.n.* [Bennett No. 2603] (*lectotype fide* J.A. Wege, *Austral. Syst. Bot.* 24: 388 (2011): BM 000645713!; *isolectotype*: BM 000645714!).

Stylidium sidjamesii Lowrie & Kenneally, *Nyctisia* 13(2): 296 (2000). *Type*: along Great Northern Hwy North of Bullsbrook, 1 km S of Wandena Rd (S end) on East side of highway, Western Australia, 9 November 1991, A. Lowrie 494 (*holotype*: PERTH 05584957!; *isotypes*: MEL 2295044 image!, PERTH 08231575!).

Stylidium junceum R.Br., *Prodr. Fl. Nov. Holland.*: 569 (1810). *Candollea juncea* (R.Br.) F.Muell., *Syst. Cens. Austral. Pl.*: 85 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: Princess Royal Harbour, King George's Sound [Western Australia], December 1801, R. Brown s.n. [Bennett No. 2598] (*lectotype fide* J.A. Wege, *Nyctisia* 24: 228 (2014): BM 000812596! [the 3 individuals with numerous scapes]; *isolectotypes*: BM 000812596! [left hand individual], K 000060236! [right hand individual]). *Paralectotypes* [*syntypes*]: BM 000812584! [left hand individual], E 00208675!, E 00208676!, FI 006814!, K 000355053! [left hand individuals and scape fragment], = *S. thryonides* Wege; BM 000812596! [scape fragments either side of the 3 lectotype individuals], BM 000812584! [central fragment and right hand individual], K 000355053!, P 00313152!, = *S. squamosotuberosum* Carlquist; DBN n.v.

Stylidium junceum var. *brevius* E.Pritz., in Diels & E.Pritz., *Bot. Jahrb. Syst.* 35: 591 (1905); *S. junceum* var. *brevior* orth. var., Mildbr. in Engl., *Pflanzenr.* IV. 278 (Heft 35): 51 (1908); *S. junceum* subsp. *brevius* (E.Pritz.) Carlquist, *Aliso* 7(1): 32 (1969). *Type citation*: 'in solo aridiore, e. gr. in dunis arenoso-calcareis ad ostium fluminis Swan River flor. m. Nov. et in distr. Stirling pr. Albany in silvis arenoso-glareosis.' *Type specimens*: [not cited; given by J. Mildbraed, *op. cit.* 53 as 'West-Australien: Distr. Stirling: S. Plantagenet nördlich von Albany, in niedrigen auf Kiesboden', 15 November 1901, L. Diels 5521] (*syn*: B n.v., destroyed in WWII). *Neotype fide* J.A. Wege, *Nyctisia* 24: 228 (2014): Chester Pass Road, south boundary of Stirling Range National Park, Western Australia, 13 October 2011, J.A. Wege & C. Wilkins JAW 1867 (*neotype*: PERTH 08541000; *isoneotypes*: CANB 826715.1, MEL 2389097).

Stylidium laricifolium Rich., in Pers. *Syn. Pl.* 2: 210 (1806). *Candollea laricifolia* (Rich.) F.Muell., *Syst. Cens. Austral. Pl.*: 86 (1882). *Type citation*: 'in Novae Hollandia s. Australasia' [Sydney, New South Wales, probably gathered on the Baudin expedition] (*syn*: MPU 016340 image!, P 00712402!, P 00712403!).

Stylidium tenuifolium R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Type citation*: '(J.) v. v.' *Type specimen*: near rivers Hawkesbury and Grose, Port Jackson [Sydney, New South Wales], R. Brown s.n. [Bennett No. 2597] (*lectotype*, here designated: BM 000645741!; *isolectotypes*: BM 000645745!, E 00279285!, K 000060167!, K 000060172!, MEL 2257733!, MEL 2257734!, NSW 658012 image!).

Notes. Three germane specimens of *S. laricifolium* have been found, two of them from Louis Claude Richard's personal herbarium, which reached P via the Drake del Castillo collection. A third specimen (MPU 016340), annotated as being from 'Port Jackson (Nouv. Hollande)' and interpreted as likely duplicate material, is from the herbarium of Jacques Cambessèdes, who received the collection from Adrien de Jussieu in 1833. Jussieu (1811) wrote at length on the floral morphology and systematic placement of *Stylidium* in an article that included an illustration of *S. laricifolium* drawn by Richard. The type of *S. laricifolium* is most likely to have been collected on Baudin's 1800–1804 expedition to New Holland with *Géographe* and *Naturaliste*, which included a visit to Port Jackson (Sydney) from June to November 1802.

Stylidium luteum R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea lutea* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: King George’s Sound [Western Australia], 19 December 1801, *R. Brown s.n.* [Bennett No. 2591] (*lectotype*, here designated: BM 000797552!; *isolectotypes*: BM 000797553!, CANB 279062!, K 000060708!).

Stylidium pedunculatum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea pedunculata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882), *nom. illeg. non R.Br. ex DC.* (1817 = *Hibbertia endlicheri* F.Muell., Dilleniaceae). *Type citation*: ‘(T.) B. v. s.’ *Type specimen*: Endeavour River [Queensland], 1770, *J. Banks & D. Solander s.n.* (*lectotype*, here designated: BM 000645707!; *isolectotypes*: BM 001041267! [study set], L 0001774 image!, NSW 133569 *n.v.*).

Stylidium bryoides F.Muell., *Fragm.* 6: 91 (1867). *Type*: Rockingham Bay [Queensland], 24 October 1867, *J. Dallachy s.n.* (*syn*: K 000060557!, MEL 1061535 image!).

Stylidium curtum Carlquist, *Aliso* 9: 421 (1979). *Type*: Wilderness Trail, 6.8 [7] km from Park Headquarters, between Lily Pond Trail turnoff and Smith’s Rock Trail turnoff, Katherine Gorge National Park, Northern Territory, 24 June 1978, *S. Carlquist* 15467 (*holotype*: RSA 283549!; *isotypes*: BRI AQ0334694 image!, DNA D0017924 image!, K 000355244!, PERTH 01640968!, US 00147149 image!).

Typification. Bean (2000: 617) did not view the two Banks and Solander duplicates of *S. pedunculatum* housed at BM. His citation ‘holo: ?BM *n.v.*; iso: L’ is not treated herein as an inadvertent lectotypification since a specific specimen is not cited.

I have located two syntypes of *S. bryoides*: MEL 1061535 and K 000060557, both of which were viewed by Bentham for *Flora Australiensis* (Bentham 1868) immediately after the species was named by Mueller. Both sheets bear annotations by Mueller and are congruent with his description, although only the K sheet is annotated as *S. bryoides*.

Stylidium piliferum R.Br., *Prodr. Fl. Nov. Holland.*: 569 (1810). *Candollea pilifera* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: King George’s Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2583] (*lectotype fide* J.A. Wege, *Nuytsia* 20: 85 (2010): BM 000894110!; *isolectotypes*: BM 001041325!, E 00279189!, K 000060745!).

Stylidium piliferum var. *minor* Mildbr., in Engl. *Pflanzenr.* IV. 278 (Heft 35): 71 (1908). *Stylidium piliferum* subsp. *minor* (Mildbr.) Carlquist, *Aliso* 7(1): 40 (1969). *Type*: King George’s Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2583] (*lectotype fide* J.A. Wege, *Nuytsia* 20: 86 (2010): BM 000894110!; *isolectotypes*: BM 001041325!, E 00279189!, K 000060745!). *Paralectotype* [*syntype*]: Kent, Hammersley River [Western Australia], October 1901, *L. Diels* 4931 (B *n.v.*, destroyed in WWII).

Stylidium saxifragoides Lindl., *Sketch Veg. Swan R.* xxviii (1839). *Type*: not cited [Swan River, Western Australia, 1835–1838, *J. Drummond s.n.* (*syntypes*: CGE!, K 000060754!); Swan River [Western Australia], 1831, *Capt. J. Mangles s.n.* (*syntype*: CGE!)]).

Notes. I previously overlooked the material collected by Mangles on the type sheet of *S. saxifragoides* at CGE (Wege 2010); the citation for this name has been updated accordingly.

Stylidium pilosum (Labill.) Labill., *Nov. Holl. Spec. Plant.* 2: 63, t. 213 (1806). *Candollea pilosa* Labill., *Ann. Mus. Hist. Nat.* 6: 453, t. 3 (1805). *Stylidium longifolium* Rich., in Pers. *Syn. Pl.* 2: 210 (1806), *nom. illeg.*, *nom. superfl.* *Type*: ‘Habitat in terrâ Van-Leuwin’ [Esperance Bay, Western Australia, 13–18 December 1792, J.J.H. Labillardière s.n.] (*syn*: FI 006836!, FI 006834!, FI 006835!, G 00358824!, P 00313114!).

Stylidium reduplicatum R.Br., *Prodr. Fl. Nov. Holland.* 568 (1810). *Candollea reduplicata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 85 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: South Coast Bay 1 [Lucky Bay, Western Australia], 12 January 1802, R. Brown s.n. [Bennett No. 2575] (*lectotype*, here designated: BM 000603857!; *isolectotype*: BM 000603858!).

Stylidium dicksonii Hort. ex Loudon, *Suppl. Hort. Brit.* [Loudon] 645 (1850), *nom. inval.*, *pro syn.* [name cited in synonymy under *S. pilosum*].

Stylidium pilosum var. *brevius* E.Pritz., in Diels & E.Pritz., *Bot. Jahrb. Syst.* 35: 589 (1905); *S. pilosum* var. *brevior* orth. var., Mildbr. in Engl., *Pflanzenr.* IV. 278 (Heft 35): 80 (1908). *Type citation*: ‘in distr. Eyre pr. Esperance in collibus graniticis sublitoralibus corolla rosea flor. m Nov. (D. 5372)’ (*holo*: B n.v., destroyed in WWII). *Neotype*: near carpark at Rossiter Bay, Cape Le Grand National Park, Western Australia, 20 October 2003, J.A. Wege & C. Wilkins JAW 997 (*neotype*, here designated: PERTH 06957277; *isoneotype*: CANB, MEL).

Notes. Labillardière’s collection of *S. pilosum* from Esperance Bay was the first triggerplant to be collected from Western Australia. Five sheets from this gathering have been found and are cited here as syntypes. Of the specimens at FI, FI 006836 and FI 006834 are labelled ex Herb. Labillardière; the former is a fruiting collection that features extensive descriptive annotations by Labillardière, while the latter bears both flowers and fruits but is not annotated by Labillardière. FI 006835, also with flowers and fruits, is labelled ex Herb. Desfontaines, bears an annotation by Labillardière in the lower right hand corner and, of all the syntypes, appears to be the best match for the illustration that appears in the original publication.

The holotype of *S. pilosum* var. *brevius* was destroyed in WWII and no duplicates are known; a neotype is designated to fix the application of this name as a synonym of *S. pilosum*. Pritzel’s recognition of this variety has its roots in the misapplication of the name *S. pilosum*, initially by Brown (1810; to material of *S. plantagineum* Sond.), and subsequently by Sonder (1845; to material of *S. affine* Sond.) and Bentham (1868; to material of *S. plantagineum*, *S. affine* and *S. albomontis* Carlquist). Mildbraed (1908) did not examine type material of *S. pilosum* and was unable to apply the name, treating *S. pilosum* var. *brevius* as a synonym of *S. reduplicatum*. The true identity of *S. pilosum* was resolved by Willis (1956).

Stylidium pygmaeum R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea pygmaea* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: ‘(M.) v. v.’ *Type specimen*: near the eastern shore of Princess Royal Harbour, King George’s Sound [Western Australia], 16 December 1801, R. Brown s.n. [Bennett No. 2604] (*lectotype fide* J.A. Wege, *Austral. Syst. Bot.* 24: 393 (2011): BM 001041264! [2 individuals on top left hand corner of sheet]; *isolectotypes*: BM 001041264! [individual mounted on top right hand corner, individual to the right of the Andrews label]).

Stylidium exoglossum F.L.Erickson & J.H.Willis, *Muelleria* 1(1): 11 (1956). *Type*: swamps c. 2 miles west of Albany aerodrome, Western Australia, 13 January 1953, R. Erickson s.n. (*holotype*: MEL

2295770A! [left hand specimen]; *isotypes*: K 000355212!, PERTH 02945630!, PERTH 01641034!, PERTH 01641042!).

Stylidium repens R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea repens* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 85 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: King George's Sound, Western Australia, 18 December 1801, *R. Brown s.n.* [Bennett No. 2606] (*lectotype fide* A. Lowrie, A.H. Burbidge & K.F. Kenneally, *Nuytsia* 13(1): 139 (1999): BM001041257!; *isolectotypes*: BM001041258!, E00279208!, E00279209!, FI006829!, K000741762! K000741764!, MEL0672618!, MEL2156138!, MEL2156139!, NSW830769!, P00712420!, P00712421!).

Stylidium radicans Sond., in Lehm., *Pl. Preiss.* 1(3): 381 (1845). *Type*: 'arenosis subumbrosis prope oppidulum Perth' [Western Australia], 16 June 1839, *L. Preiss* 2300 (*lectotype fide* A. Lowrie, A.H. Burbidge & K.F. Kenneally, *Nuytsia* 13(1): 139 (1999): MEL672627! [labelled 'Nov. Holland austro-occid.' in Sonder's script]; *isolectotypes*: FI006828!, LD1731603!, ?M0097290 image!, MEL672626, MEL672628 [?all material not in clear packet], ?S-G-5879 image!). *Paralectotypes* [*syntypes*]: 'arenosis subumbrosis prope oppidulum Perth' [Western Australia], 16 June 1839, *L. Preiss* 2299 (BR0000005422272 image!, FI012792!, G00358849!, G00358850!, G00358851!, GOET011209 image!, L0001776 image!, LD1731667!, M0175779 image!, M0175780 image!, MEL672625, MEL672628 [material in clear packet], MEL672629, MO-797521 image! [as 14 Oct. 1840], P00712422!, W[4 sheets]!); King George's Sound [Western Australia, 1834], *Hügel s.n.* (W[2 sheets]!); Swan River [Western Australia, 1831], *Capt. Mangles (n.v.)*; 'Australasia', *s. dat.*, *L. Preiss s.n.* (HBG510791 image! [presumably type material but cannot be assigned to either of the collections cited above]).

Notes. Lowrie *et al.* (1999) selected BM001041257 (A.H. Burbidge *in sched.*) as the lectotype of *S. repens*; however, this sheet is the Dryander duplicate and may not have been used by Brown for his *Prodromus* descriptions (D.J. Mabberley pers. comm.). Nonetheless, this lectotypification must stand. The Bennett number, which is curiously cited as 2637 in Lowrie *et al.* (1999), is amended to 2606. While M0097290 and S-G-5879 are unnumbered Preiss collections, they are interpreted as possible duplicates of the lectotype since they are from Sonder's Herbarium and are labelled by him in a near identical fashion to the lectotype.

Stylidium rotundifolium R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810). *Candollea rotundifolia* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(T.) v. v.' *Type specimens*: East Coast, Port 1 [Curtis Island or Facing Island, Port Curtis District, Queensland], 5–9 August 1802, *R. Brown s.n.* [Bennett No. 2600] (*holotype*: BM000563898!).

Notes. Bean (2000: 631) selected BM000563898 as the lectotype of *S. rotundifolium*; however, there is no duplicate material and consequently this sheet is treated herein as the holotype. Although Banks and Solander made a gathering from Endeavour River (BM000563905, BM000563907, NSW133568), it was not cited by Brown (1810) and is therefore not type material.

Stylidium scandens R.Br., *Prodr. Fl. Nov. Holland.* 570 (1810). *Candollea scandens* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimens*: banks of Oyster Harbour River, King George's Sound [Western Australia], December 1801, *R. Brown* [Bennett No. 2595] (*lectotype fide* J.A. Wege, *Nuytsia* 20: 88 (2010): BM000812595!; *isolectotypes*: BM000812586!, CANB279064!, DBN *n.v.*, E00279205!, E00279206!, E00279207!, K000060294!, K000060297!, MEL2104983!, P00313126!). *Paralectotypes* [*syntypes*]: banks of the lakes towards Cape How [Lake Powell, Western Australia], 23–24 December 1801, *R. Brown s.n.* (BM000812594!, K000355275!),

= *S. nymphaeum* Wege; King George's Sound, December 1801, *R. Brown s.n.* (BM 000812585!, K 000741795!), = *S. nymphaeum* Wege.

Stylidium scandens var. [published as β] *humile* Sond., in Lehm., *Pl. Preiss.* 1(3): 381 (1845). *Type*: 'In subarenosis hieme inundatis districtus Hay' [between Balgarup and Lake Matilda, Western Australia], 8 November 1840, *L. Preiss* 2296 (*lectotype fide* J.A. Wege, *Nyctisia* 20: 88 (2010): MEL 293424!; *isolectotypes*: FI 113180!, G 00358861!, G 00358862!, L 0001777 image!, LD 1000802B!, M 0097291 image!, MEL 293423!, MEL 293425!, MEL 293426!, W! [2 sheets]).

Stylidium spathulatum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea spathulata* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: King George Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2585] (*lectotype fide* J.A. Wege, *Nyctisia* 16(1): 234 (2006): BM 000797693!; *isolectotypes*: BM 000797692!, E!, K 000060697!).

Stylidium lehmannianum Sond., *Delectus Seminum quae in Horto Hamburgensis Botanico*: 7 (1844); *S. spathulatum* var. *lehmannianum* (Sond.) Mildbr., in Engl. *Pflanzenr.* IV. 278 (Heft 35): 58 (1908). *Type*: not cited [given by Sond. in Lehm., *Pl. Preiss.* 1: 375 (1845) as 'In solo limoso inter frutices ad latus meridionali-occidentale montis Clarence, Plantagenet [Western Australia], d. 7 Dec. 1840. Herb. Preiss. No. 2261'] (*lectotype fide* J.A. Wege, *Nyctisia* 16(1): 234 (2006): MEL 2069495!; *isolectotypes*: BR 0000005422296 image!, FI 006929!, FI 012790!, G 00358870!, G 00358871!, G 00358872!, GOET 011210 image!, LD 1730707!, MEL 2069496!, MEL 2069497!, MEL 2069498!, MO-797520 image!, P 00712429!, W! [4 sheets]).

Stylidium lehmannianum var. [published as β] *gracile* Sond., in Lehm., *Pl. Preiss.* 1(3): 376 (1845). *Type*: In limoso-glareosis sterilibus districtus Hay [Western Australia], 8 November 1840, *L. Preiss* 2260 (*lectotype fide* J.A. Wege, *Nyctisia* 16(1): 234 (2006): MEL 2069494B!; *isolectotype*: LD 1753620!). *Paralectotype* [*syntype*]: In rupestribus ad Princess Royal Harbour, 11 October 1840, *L. Preiss s.n.* (MEL 2069494A!).

Stylidium bellidifolium Sond., in Lehm., *Pl. Preiss.* 1(3): 376 (1845). *Type*: 'In arenosis ad litus Point Possession', 16 October 1840, *L. Preiss* 2259 (*lectotype fide* J.A. Wege, *Nyctisia* 16(1): 234 (2006): MEL 2296913!; *isolectotype*: G 00358868!, G 00358869!, LD 1753556!, MEL 2296914!, P00712430!, W!).

Stylidium spathulatum f. *luxuriens* Wawra, *Itinera principum S. Coburgi* 1: 130 (1883). *Type*: 'Australien, King George's sound' [1872], *H.R. Wawra von Fernsee* Coll. I 909 (*holotype*: W!).

Stylidium spathulatum var. *obovatum* Ostenf., *Biol. Meddel. Kongel. Danske Vidensk. Selsk.* III, 2: 126 (1921). *Type*: Wilgarup, south of Bridgetown, 1 October 1914, *C.H. Ostenfeld* 1071 (*holotype*: K 000060707!).

Stylidium spinulosum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea spinulosa* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 85 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: King George's Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2581] (*lectotype*, here designated: BM 000812597!; *isolectotypes*: BM 000812583!, CANB 279065!, E 00279192!, E 00279193!, E 00279194!, K 000060335!, K 000060337!, MEL 2259809 *n.v.*).

Notes. I have mistakenly and inexplicably annotated P00712431 (collected by Ferdinand von Mueller) as type material.

Stylidium tenerum Spreng., *Syst. Veg.* (ed. 16) 3: 749 (1826). *Stylidium tenellum* R.Br., *Prodr. Fl. Nov. Holland.* 571 (1810), *nom. illeg., non* Sw. in Willd., *Sp. Pl.* 4(1): 146 (1805). *Type citation*: '(T.) v. v.' *Type specimen*: East Coast Shoal water Bay [Queensland], 6 August 1802, *R. Brown s.n.* [Bennett No. 2599] (*lectotype*, here designated: BM 000563897!; *isolectotypes*: BM 000563908!, E 00279223!, K 000060568!, K 000060570!, MEL 1061494!).

Notes. Bean (2000: 601) mistakenly noted that Brown's original description of this species was based on two specimens, one collected by Banks and Solander (who did not collect this species) and the other by Brown. He appears to regard the Brown material at BM, which comprises a specimen from Brown's herbarium (BM 000563897) and the Dryander duplicate (BM 000563908), as a single specimen, annotating both sheets as the lectotype; however, these two specimens should be considered duplicates.

Stylidium violaceum R.Br., *Prodr. Fl. Nov. Holland.* 569 (1810). *Candollea violacea* (R.Br.) F.Muell., *Syst. Census Austral. Pl.*: 86 (1882). *Type citation*: '(M.) v. v.' *Type specimen*: Princess Royal Harbour, King George's Sound [Western Australia], December 1801, *R. Brown s.n.* [Bennett No. 2590] (*lectotype*, here designated: BM 000797485!; *isolectotypes*: BM 000797486!, CANB 279066!).

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